

# SOLAR POWERED SIGN ANNUNCIATOR

## Abstract

A solar powered sign annunciator comprised of a plurality of high intensity light emitting diodes (LED); a microprocessor controller to regulate power consumption and annunciator characteristics, battery charging and sensor response with an integrated software charge controller; a minimalized solar panel array sized to produce sufficient power for battery charging under normalized solar radiation to latitudes as far north as 45 degrees; a direction sensing Doppler radar to determine the approach of traffic; a low voltage battery to minimize power control losses to the LED array; a temperature sensor to determine proper charging battery status and battery capacity; and a plurality of analog to digital (A/D) converters incorporated in the microprocessor to sense solar power output, temperature input, battery voltage and charging current and Doppler phase shift differential. The system also includes a housing arrangement to incorporate all aforementioned items in a weathertight enclosure providing sufficient horizontal surface for solar cell attachment yet in a package compact enough to easily attach to existing designed signs.